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SUBJECT: OVERVIEW OF BULGARIA'S CIVIL NUCLEAR ENERGY PROGRAM

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[1](#)B. SOFIA 00641

[1](#)C. SOFIA 00708

[1](#)D. SOFIA 00033

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[1](#)1. (U) This is Embassy Sofia's response to Ref A Department of Commerce request for information on Bulgaria's civil nuclear energy program.

#### OVERVIEW OF BULGARIA'S CIVIL NUCLEAR POWER PROGRAM

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[1](#)2. (U) Bulgaria ratified the Statute of the International Atomic Energy Agency (IAEA) in 1957, and, in 1961, constructed its first nuclear research reactor, the IRT-2000.

In 1966, Bulgaria and the Soviet Union signed an agreement for commercial nuclear units which provided the basis for the country's nuclear power program. Construction on the Kozluduy Nuclear Power Plant (KNPP) EAD -- the only nuclear plant currently operating in Bulgaria -- began in 1970. Kozluduy is located on the Danube border with Romania and originally consisted of four VVER-440 V230 reactors (units 1-4) and two VVER 1000 reactors (units 5-6). Only units 5 and 6 operate now as Bulgaria shut down blocks 1-4 as part of its EU accession agreement. Units 1 and 2 were shut down due to safety concerns in 2003. Units 3 and 4 were taken off-line at the end of 2006, on the eve of Bulgaria's EU accession. As compensation, the EU created the 550 million Euro Kozluduy International Decommission Support fund. Managed by the European Bank for Reconstruction and Development (EBRD), this fund supports Bulgarian energy efficiency and renewable energy projects.

[1](#)3. (SBU) Bulgaria plans to expand its nuclear power program with the construction of two new units at Belene, also located near the Danube border with Romania. Site works started in 1980 and construction of a reactor began in 1987, but building was aborted in the early 1990s due to lack of funds. In 2005, the Bulgarian government approved the construction of a new 2000 MWe plant at Belene. The Bulgarian National Electric Company (NEC) hired WorleyParsons as the Architect Engineer for the financing and construction of the plant in 2005. In 2006, NEC chose Russia's Atomstroyexport (ASE) over a Skoda-led consortium to build two 1000-MWe AES-92 VVER units with third generation reactors. Russia leads a consortium, including Siemens-Areva NP and Bulgarian enterprises, in the EUR 4 billion project. A construction permit was issued in July 2008 and ASE signed a contract with Siemens-Areva consortium for the instrumentation and control systems in November 2008.

Bulgaria is keeping majority ownership of the plant, and in November 2008 selected a strategic investor -- Germany's RWE -- via a tendering process for the other 49 percent. NEC and RWE signed the contract for Belene in December 2008. Belgium's Electrabel may also join the project. The first reactor was originally scheduled to come into operation between 2013-2015, but significant delays and cost over-runs are likely.

¶4. (SBU) Current regional electricity shortages and the desire to become a regional "energy hub" fuel Bulgaria's desire to expand its civil nuclear power program. Before the closure of Kozluduy units 3 and 4, Bulgaria was a net electricity exporter in the Balkans, covering 50 percent of the region's electricity deficit. In 2006, Bulgaria exported 7.8 billion kWh/year to Greece, Macedonia, Albania, Kosovo and Serbia. This number fell 42 percent to 4.5 billion kWh/yr in 2007. Although Bulgaria still has capacity to cover between 10 and 20 percent of the region's electricity deficit, the Bulgarian government was forced to stop all electricity exports in order to cover Bulgarian energy needs from January-March 2008. Citing the Balkan region's energy deficit, the Bulgarians have lobbied hard for the re-opening of Kozluduy reactors 3 and 4, which they believe could be safe and operational with limited re-furbishing. The EU disagrees. According to the EBRD, reactors 3 and 4 are inherently unsafe, and the re-opening of the reactors is a complete non-starter. The closure of Units 3 and 4 is part of Bulgaria's EU accession acquis, and for this to be changed, all 27 member states must agree to renegotiate Bulgaria's accession agreement. Nevertheless, some Bulgarian officials have cited Article 36 of Bulgaria's acquis -- which states Bulgaria could ask for the reopening of the reactors

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should a critical situation in the region emerge -- to argue for the re-opening of the units 3 and 4. The Kozluduy site may also be an attractive site for the development of new reactors (future units 7 and 8). The infrastructure is already in place and the Bulgarian government is supportive, although officials say it must be a commercial, rather than Government-subsidized, project.

¶5. (SBU) The Ministry of Economy and Energy is responsible for the country's nuclear power industry. The two main controlling entities are the Nuclear Regulatory Agency (NRA), established under the Safe Uses of Nuclear Energy Act of 2002, and the Kozluduy Nuclear Power Plant (KNPP) EAD. The NRA assumed the functions of its predecessor, the Committee on the Safe Use of Atomic Energy for Peaceful Purposes (CUAEP), created in 1985. The NRA regulates nuclear installations in relation to safety and radiation protection, as well as the management of radioactive waste. The NRA has been a member of the Western European Nuclear Regulator's Association (WENRA) since 2003.

¶6. (U) NEC, Kozluduy NPP EAD, Mini Maritsa Iztok, EAD, Maritsa East 2 TTP EAD, Electricity System Operator EAD, Bulgargaz EAD, Bulgartransgaz ED, and Bulgartel EAD were incorporated into the Bulgarian Energy Holding (BEH) EAD in September 2008. BEH EAD is a shareholder company with 100 percent state-owned participation. All companies brought together in the holding structure preserve their operational independence and licenses even as they are all owned and directly subordinated to the corporate center BEH EAD. BEH functions include the acquisition, management, assessment and sale of participation in trading companies and the day-to-day operational business activities in the field of generation, production, transmission, transit, storage, management, distribution, sale and/or purchase of natural gas, electricity, thermal power, coal, and any other type of energy and raw materials for production.

INTERNATIONAL AGREEMENTS

¶7. (SBU) Bulgaria is a signatory to the following conventions: Convention on Nuclear Safety; Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency; Convention on Early Notification of a Nuclear Accident; Convention for the Physical Protection of Nuclear Material; Vienna Convention on Civil Liability for Nuclear Damage and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Bulgaria is also party to the Nuclear Non-Proliferation Treaty (NPT) as a non-nuclear weapons state, and its safeguards agreement under the NPT came into force in 1973. It is a member of the Nuclear Suppliers' Group (NSG), but not yet of Euroatom. In 2000, Bulgaria signed the Additional Protocol in relation to its safeguards agreements with the IAEA.

¶8. (SBU) In March/April 2008, the U. S. government and Bulgaria signed a Fuel Return Agreement that allows U. S. and Bulgarian experts to remove spent nuclear fuel (HEU) from the ITR-2000 reactor in Sofia and transport it to Russia, its original source. The agreement also lays the foundation for increased scientific research and cooperation at the reactor between both countries. All together, over 50 million dollars of U.S., Bulgarian, and IAEA funds will transform the existing outdated reactor into a safe, state-of-the-art 200KW research and training reactor -- the most advanced kind in the Balkans.

#### OPPORTUNITIES FOR U. S. INDUSTRY

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¶10. (SBU) At this time, there are no anticipated nuclear-related tenders. There will be opportunities for U. S. industry in consulting services, plant construction management and reactor sales, should the Bulgarian government decide to build new units 7 and 8 at Kozluduy or, in the very remote possibility that the EU allows the reopening of units 3 and 4. In addition, there may be opportunities for U. S. industry to support the conversion and operation of the IRT-Sofia reactor with low enriched uranium (LEU). The primary companies involved in Bulgaria's civil nuclear sector

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are Bulgaria's Energy Holding, Russia's ASE, WorleyParsons, Westinghouse, RWE, Siemens-Areva, Bulgarian companies such as Risk Engineering and other smaller Bulgarian companies (SEE REFTEL B). Russia's TVEL, through Technabexport (Tenex), provides fuel cycle services, and Bulgaria's State Enterprise for Radioactive Wastes (SE-RAW) is responsible for waste management.

¶9. (SBU) Although there is a manufacturing base in Bulgaria (which includes high-tech components and heavy industry) much of the nuclear-related products and services will need to be outsourced. Bulgaria does have a highly qualified and well trained nuclear workforce. However, an expansion of civil nuclear power will likely require a significant number of foreign workers.

#### FOREIGN COMPETITORS

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¶11. (SBU) Russia, Germany, Canada, and other EU nations have expressed interest in Bulgaria's civil nuclear power program.

In 2006, three foreign companies, the Canadian firms Cameco and Resources House, along with the Russian-owned TVEL, expressed interest in the research and exploration of Bulgarian uranium deposits. Since Bulgaria is an EU member, U. S. companies will likely experience tough competition from other EU member state companies. In addition, Russia

dominates the Bulgarian energy sector (SEE REFTELS B-E). With few hydrocarbons of its own, Bulgaria relies on Russia for more than half of its energy needs. In addition, Bulgaria is party to several other strategic energy partnerships with Russia -- the South Stream and Burgas-Alexandroupolis pipelines -- along with the Belene nuclear power plant. These partnerships, combined with a lack of a common European Energy policy, are harming the ability of Europe and the United States to realize their own priority projects for the region.

McEldowney